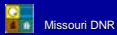# Case Studies: Socio-Economic Impact Analyses For Two Public Facilities

Created 7/27/06
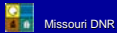
Missouri DNR

1

Public Entity: Affordability for Communities

- **MUNICIPAL PRELIMINARY SCREENER** (MPS)
  (i.e., Ability to Pay, by Household)

MPS = $\dfrac{\text{Ave. Annualized Project Cost per Household}}{\text{Median Household Income (MHI)}}$
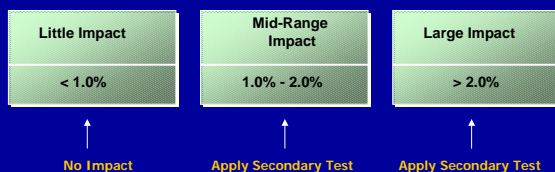
- **SECONDARY TEST**
  Six Community Assessment Indicators
  - Two Debt Indicators
  - Two Socioeconomic Indicators
  - Two Financial Management Indicators

Missouri DNR

2

MUNICIPAL PRELIMINARY SCREENER (MPS)

Used to Evaluate Potential for Impacts to Households

Little Impact	Mid-Range Impact	Large Impact
< 1.0%	1.0% - 2.0%	> 2.0%
No Impact	Apply Secondary Test	Apply Secondary Test

Missouri DNR

3

Secondary Test For Public Entity

1. Bond Rating: Measures of Credit Worthiness of a Community
2. Overall Debt as % of Taxable Property
3. Unemployment Rate
4. Median Household Income
5. Property Tax Revenue as % of Property Value
6. Property Tax Collection Rate

Missouri DNR

4

SECONDARY TEST METHOD OF ASSESSMENT

For each measure, assign a score, where

Weak = 1   Mid-Range = 2   Strong = 3

"Cumulative Secondary Test Score" equals the average of these scores.

Missouri DNR

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Secondary Indicators

Indicators	Weak	Mid-Range	Strong
Bond rating (rating agencies – e.g., Moody's, Standard & Poor's Corp.)	Below	Equal	Above
Overall Debt as % of FMV of Taxable Property	Above 5%	2% - 5%	Below 2%
Unemployment Rate	Above Natl. Average	Equal Natl. Average	Below Natl. Average
Median Household Income	Below State MH Income	Equal State MH Income	Above State MH Income
Property Tax Revenue as % of FMV of Taxable Property	Above 4%	2% - 4%	Below 2%
Property Tax Collection Rate	< 94%	94% - 98%	> 98%

Missouri DNR

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CUMULATIVE SECONDARY TEST ASSESSMENT

Average the Scores of All Measures

Weak	Mid-Range	Strong
< 1.5	1.5 - 2.5	> 2.5

For Example: 1 + 2 + 1 + 3 + 2 + 3 = 12

12/6 = 2

So, the community falls within mid-range.

Missouri DNR

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ASSESSMENT OF IMPACTS MATRIX

Secondary Assessment Score	Municipal Preliminary Screener (MPS)		
	< 1.0%	1.0% - 2.0%	> 2.0%
< 1.5	?	+	+
1.5 - 2.5	√	?	+
> 2.5	√	√	?

? = Questionable affordability

√ = Community <u>can</u> afford the pollution control

+ = Community <u>cannot</u> afford the pollution control

Missouri DNR

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Example 1: "City A" WWTF, Missouri

Estimated Total Cost = $2,653,000
Financed 100% by SRF for 20 years
@ Interest Rate = 2.0%

New Annual O & M   = $1,043,822.00

Number of the households to be served =17,173
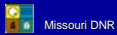
Median Household Income (MHI) = $40,278

Missouri DNR

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3

"City A" example continued...

New Annual Capital Cost	$	162,364
New Annual O & M	+	$1,043,822
Total Annual Cost	=	$1,206,186

Number of the Households = 17,173

Current Annual Costs/Household		$310.60
New Annual Costs/Household	+	$ 54.08
Total Annual Costs/Household	=	$364.68

Median Household Income (MHI) = $40,278
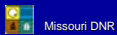
Missouri DNR 10

Municipal Preliminary Screener Test

$$\text{MPS} = \frac{\$364.68}{\$40,278} = 0.91\%$$

Because the MPS $\cong$ 1%,
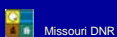the requirements are expected to impose a mid-range impact on households and may interfere with the development.

Next, (as per Slide 3) Apply the Secondary Test...

Missouri DNR 11

"City A": Secondary Measures

1.) Bond Rating: Weak bond rating

2.) Overall Debt as % of Taxable Property: Not available

3.) Unemployment Rate =   3.4% (strong measure)

4.) Median Household Income = $40,278 (strong measure)

5.) Property Tax Revenue as % of Property Value: Not available

6.) The Property Tax Collection Rate = Not available

Missouri DNR 12

Assign Scores to "City A" Secondary Test

1.) Weak Bond Rating > Assign a score of 1

2.) Strong Unemployment Rate Indicator > score 3

3.) Strong Household Income Indicator > score 3

The Average Score = (1+3+3)/3 = 7/3 = 2.3

Missouri DNR   13

Apply the IMPACTS MATRIX to the "City A" Public Facility:

Secondary Assessment Score	Municipal Preliminary Screener (MPS)		
	< 1.0%	1.0% - 2.0%	> 2.0%
< 1.5	?	+	+
1.5 - 2.5	√	? City A	+
> 2.5	√	√	?

? = Questionable affordability
√ = Community can afford the pollution control
+ = Community cannot afford the pollution control

Missouri DNR   14

Since the result was, "Questionable Affordability," the next step is to measure the importance to the community by looking at more socioeconomic indicators:

Indicators	Before	After
• Total number of New Jobs in the Community		
• Personal Income in the Community		
• % of Households Below Poverty Line		
• Impact on Property Values		
• Community Total Tax Revenue		
• Expenditure on Social Services		

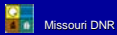Missouri DNR   15

Example 2: "City B" WWTF (Phase 1)

Estimated Total Cost = $1,142,500
Financed 100% by SRF for 15 years
@ Interest Rate = 3.93%

New Annual O & M = $980,754.00

Number of the Households to be served =2,268

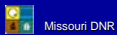**Median Household Income (MHI) = $26,737**

Missouri DNR   16

"City B" example continued...

New Annual Capital Cost	**$ 102,255.38**
New Annual O & M	**+ $ 980,754.00**
Total Annual Cost	**= $1,083,009.38**

Number of the Households =2,268

Current Annual Costs/Household	**$ 542.78**
New Annual Costs/Household	**+ $ 477.52**
Total Annual Costs/Household	**= $1020.30**

Median Household Income (MHI) = $26,737

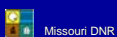Missouri DNR   17

Municipal Preliminary Screener Test

$$MPS = \frac{\$ 1,020.30}{\$26,737.00} = 3.8\%$$

Because the MPS > 2%,
the requirements are expected to impose a large impact on households and may interfere with the development.
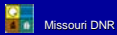
Next (as per Slide 3), Apply the Secondary Test...

Missouri DNR   18

"City B": Secondary Measures

1.) Bond Rating: Not available

2.) Overall Debt as % of Taxable Property: Not available

3.) Unemployment Rate =   2.4% (strong measure)

4.) Median Household Income = $26,737 (weak measure)

5.) Property Tax Revenue as % of Property Value: Not available

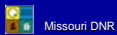6.) The Property Tax Collection Rate = 98.9% (strong measure)

Missouri DNR   19

Assign Scores to "City B" Secondary Measures

1.) Weak Bond Rating > Assign a score of 1

2.) Strong Unemployment Rate Indicator > score 3

3.) Weak Household Income Indicator > score 1

The <u>Average Score</u> = (1+3+1)/3 = 5/3 = <u>1.67</u>

Missouri DNR   20

Apply the IMPACTS MATRIX to the "City B" Public Facility:

Secondary Assessment Score	Municipal Preliminary Screener (MPS)		
	< 1.0%	1.0% - 2.0%	> 2.0%
< 1.5	?	+	+
1.5 - 2.5	√	?	+ City B
> 2.5	√	√	?

? = Questionable affordability
√ = Community <u>can</u> afford the pollution control
+ = Community <u>cannot</u> afford the pollution control

Missouri DNR   21

Conclusions

- "City A" has a questionable affordability.

- "City B" cannot afford the pollution control and there is a big economic impact on households.

That's it. Questions?

CONTACT INFORMATION

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